

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
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EPAS ID: PAT6014107

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
DAVID LEACH	06/26/2018
JEFFREY D HARTGERINK	06/26/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	WILLIAM MARSH RICE UNIVERSITY
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<b>State/Country:</b>	TEXAS
<b>Postal Code:</b>	77005
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	16618043
<b>CORRESPONDENCE DATA</b>	
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<b>Email:</b>	atrampel@phiplaw.com
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<b>Address Line 4:</b>	AUSTIN, TEXAS 78746
<b>ATTORNEY DOCKET NUMBER:</b>	RICE.P0027US
<b>NAME OF SUBMITTER:</b>	STEVEN L. HIGHLANDER
<b>SIGNATURE:</b>	/Steven L. Highlander/
<b>DATE SIGNED:</b>	03/13/2020
<b>Total Attachments: 4</b>	
source=RICE.P0027US - PCT Executed Assignment to Rice (00762451.PDF;1)#page1.tif	
source=RICE.P0027US - PCT Executed Assignment to Rice (00762451.PDF;1)#page2.tif	
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## ASSIGNMENT

This Patent Assignment (“Assignment”) is made and entered into as of by and between David LEACH, a citizen of the United States of America and Jeffrey D. HARTGERINK, a citizen of the United States of America (the “Assignor(s)”) and WILLIAM MARSH RICE UNIVERSITY, a Texas non-profit corporation, organized and existing under the laws of Texas, having a place of business at 6100 Main Street, Houston, Texas 77005 (the “Assignee”).

WHEREAS, Assignor(s) has agreed to assign and transfer to Assignee, and Assignee has agreed to acquire and accept from Assignor(s), Assignor(s)’s rights in the following United States application (the “Assigned Patents”):

International Application No. PCT/US2018/037716 filed June 15, 2018, which claims priority to U.S. Provisional No. 65/520,834 filed June 16, 2017.

NOW, THEREFORE, in consideration of the premises, mutual covenants and provisions herein contained, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the parties hereto agree to execute this Assignment, as follows:

**1.0 Assignment.** The Assignor(s) has assigned and/or by these presents does hereby assign, transfer and convey unto Assignee, the Assignor(s)’s whole and entire right, title and interest for the United States and all other countries throughout the world (i) in and to the inventions claimed or disclosed in the Assigned Patents, including all patents granting from the Assigned Patents or any continuation, continuation-in-part, division, renewal, substitute, reexamination or reissue thereof, including any patents in the United States and in all other countries throughout the world obtained based upon a claim of priority to any said Assigned Patents as provided for by United States law, the Patent Cooperation Treaty, the European Patent Convention, the Paris Convention, or other applicable law, as well as the right to claim priority to any said Assigned Patents as provided for by United States law, the Patent Cooperation Treaty, the European Patent Convention, the Paris Convention, or other applicable law, and (ii) in and to all rights to sue for and collect damages resulting from past, present and future infringement of said patents and patent applications in (i).

**2.0 Enjoyment.** The patents and patent applications subject to Paragraph 1 shall be held and enjoyed by Assignee, for Assignee’s use and benefit, and for Assignee’s legal representatives and assigns, to the full end of the term or terms for which same may be granted, as fully and entirely as the same would have been held by Assignee had this assignment and transfer not been made.

**3.0 Authorize and Request.** Assignor(s) authorizes and requests the issuing authority to issue any and all United States and foreign patents granted on such patents and patent applications in 1.0(i) to the Assignee.

**4.0 Warrant and Covenant.** Assignor(s) warrants and covenants that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the Assignor(s), and that the full right to convey the same as herein expressed is possessed by the Assignor(s).

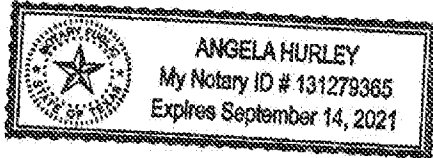
**5.0 Assistance.** The parties to this Assignment shall use commercially reasonable efforts to take, or cause to be taken, all actions, and to do, or cause to be done, all things, necessary or advisable to consummate the transactions contemplated by this Assignment. Without limiting the foregoing, each of Assignor(s) and Assignee shall cooperate with the other without any further consideration to execute and deliver, or use commercially reasonable efforts to cause to be executed and delivered, all documents as may reasonably be necessary to secure the vesting in Assignee of all rights assigned to Assignee by this Assignment, including without limitation any documents required to record this Assignment with local patent offices, and all rightful oaths, declarations, and other papers.

**6.0 Binding.** The Assignment is binding on the heirs, assigns, representatives and successors of the Assignor(s) and extends to the successors, assigns and nominees of the Assignee.

**7.0 Effectiveness.** The assignment of said inventions is or was effective as of the earlier of (1) the date of execution of the Assignor(s) indicated below or (2) the filing date of the first filed of the patent applications of the Assigned Patents.

(Signature page follows)

IN WITNESS WHEREOF, David LEACH has executed this Patent Assignment, or has caused this Patent Assignment to be executed on his/her behalf by a representative duly authorized, all as of the date set forth below.



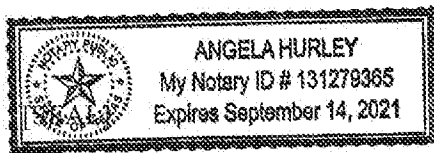
David LEACH

Signature: *David Leach*

Date: 6/26/18

STATE OF Texas  
COUNTY OF Harris

BEFORE ME, the undersigned authority, on this 26<sup>th</sup> day of June, 2018 personally appeared David LEACH known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same of his/her own free will for the purposes and consideration therein expressed.



*Angela Hurley*  
Notary or Consular Officer

IN WITNESS WHEREOF, Jeffrey D. HARTGERINK has executed this Patent Assignment, or has caused this Patent Assignment to be executed on his/her behalf by a representative duly authorized, all as of the date set forth below.

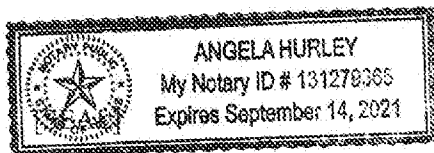
Jeffrey D. HARTGERINK

Signature: *Jeffrey D. Hartgerink*

Date: 6-26-2018

STATE OF Texas  
COUNTY OF Harris

BEFORE ME, the undersigned authority, on this 26<sup>th</sup> day of June, 2018 personally appeared Jeffrey D. HARTGERINK known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same of his/her own free will for the purposes and consideration therein expressed.



*Angela Hurley*  
Notary or Consular Officer

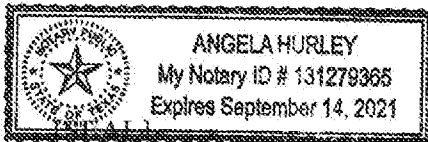
IN WITNESS WHEREOF, Assignee has executed this Patent Assignment, or has caused this Patent Assignment to be executed on its behalf by a representative duly authorized.

**William Marsh Rice University**

By:   
Name: Asha Rajagopal  
Title: Director - OTT  
Date: 6.26.2018

STATE OF TEXAS  
COUNTY OF HARRIS

BEFORE ME, the undersigned authority, on this 26<sup>th</sup> day of June, 2018 personally appeared Asha Rajagopal, Director-OTT of WILLIAM MARSH RICE UNIVERSITY known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he/she executed the same of his/her own free will for the purposes and consideration therein expressed.



Notary or Consular Officer